



UNITED STATES PATENT AND TRADEMARK OFFICE

cen

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/775,242

02/11/2004

Toshiya Koyama

118652

9908

25944 7590 04/11/2007
OLIFF & BERRIDGE, PLC
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

FUJITA, KATRINA R

ART UNIT

PAPER NUMBER

2609

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

04/11/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/775,242

Applicant(s)

KOYAMA ET AL.

Examiner

Katrina Fujita

Art Unit

2609

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 07/07/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The disclosure is objected to because of the following informalities:

The first line of the specification does not include a sentence acknowledging applicant's claim for foreign priority. The examiner suggests amending the specification to include that information.

At page 8, line1, "FIGS. 3A and 3B" should be --FIG. 3--.

At page 9, line 22, "display section 14" should be --control section 11--.

At page 14, line 22, "represented in component" should be --represented in
component--.

At page 18, line 8, "confusion color focus" should be --confusion color focus
locus--.

At page 32, line 13, "FIG. 11" should be --FIG. 11A--.

Appropriate correction is required.

3. The use of the trademarks Microsoft™ PowerPoint®, Adobe™ Acrobat® and PostScript® have been noted in this application. They should be capitalized wherever they appear and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Objections

4. The disclosure is objected to because of the following informalities:

In claim 5, line 2, "which of blocks" should be --which of blocks--.

Appropriate correction is required.

5. The following is a quotation of 37 CFR 1.75(a):

The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.

6. Claims 4, 6 and 7 are objected to under 37 CFR 1.75(a), as failing to particularly point out and distinctly claim the subject matter which application regards as his invention or discovery.

Art Unit: 2609

Claim 4 lacks antecedent basis for "the attention confusion color locus" in line 9. The following will be assumed for examination purposes: "~~the~~ an attention confusion color locus".

Claim 6 lacks antecedent basis for "the attention color" in line 4. The following will be assumed for examination purposes: "~~the~~ an attention color".

Claims 6 and 7 lack antecedent basis for "the color component space" in line 2. The following will be assumed for examination purposes: "~~the~~ a color component space".

Claims 6 and 7 lack antecedent basis for "the lightness component" in line 2. The following will be assumed for examination purposes: "~~the~~ a lightness component".

Claim 7 recites "the colors" in line 5. It is unclear whether this is intended to be the same as or different from the "colors" recited in line 3 of claim 1 or the "colors" recited in line 5 of claim 1. The following will be assumed for examination purposes: "~~the~~ confusion colors".

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2609

8. Claims 1, 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Tachibana et al. (US 2001/0053246).

Regarding **claims 1 and 8**, Tachibana discloses a color conversion system ("color conversion system" at paragraph 0012, line 3) and corresponding method comprising:

a determination unit (figure 1, numeral 33) that determines at least some of a plurality of colors contained in input document data as a determined color group (figure 4, numeral S420; "pre-processing for specifying the target color to be converted with predetermined range" at paragraph 0044, line 9);

a retrieval unit (figure 1, numeral 33) that determines a set of confusion colors of the colors contained in the determined color group (figure 4, numeral S430) based on confusion color information defined in association with color blindness of a human being in a predetermined color component space ("a color that a user whose color vision is impaired can not easily discriminate is specified in advance as a target color to be converted" at paragraph 0049, line 1); and

a processor (figure 2, numeral 203) that performs a predetermined process for portions of the colors contained in the confusion color set determined by the retrieval unit in the input document data ("pre-processing required for the succeeding color conversion is performed" at paragraph 0049, line 4).

Regarding **claim 7**, Tachibana discloses a system wherein

Art Unit: 2609

a color component space contains a lightness component of each of the colors contained in the determined color group ("maximum luminance is set for a pertinent color (by setting the color elements to 0 or 255)" at paragraph 0051, line 2); and

the retrieval unit does not determine whether or not the confusion colors different in lightness on the color vision characteristics of a human being are confused with each other ("a color that a user whose color vision is impaired can not easily discriminate is specified in advance as a target color to be converted" at paragraph 0049, line 1, i.e. each color is compared independently of each other).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 2 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Tachibana and Meyer et al. ("Color-Defective Vision...", IEEE Article).

Tachibana discloses that the retrieval unit determines some of the plurality of colors as a confusion color set when some of the plurality of colors in the determined color group are contained in a predetermined range (figure 8; "if all the extracted color

Art Unit: 2609

elements (R, G, B) lie within a range extending from the maximum to the minimum value of the predetermined color that was set, the pertinent color is deemed to be such predetermined color" at paragraph 0048, line 17) defined in the proximity of one attention confusion color in a confusion color group defined so as to contain confusion colors in color blindness in the color component space ("color that a user whose color vision is impaired can not easily discriminate is specified in advance as a target color to be converted" at paragraph 0049, line 2).

Tachibana does not teach the attention confusion color being a confusion color locus in a confusion color locus group.

Meyer teaches the attention confusion color being a confusion color locus in a confusion color locus group (figures 3, 4, 5).

It would have been obvious at the time the invention was made to one of ordinary skill in the art for the confusion colors of Tachibana to be defined by the confusion loci taught by Meyer as described above, to eliminate unnecessary processing by limiting the criteria of what constitutes a confusion color.

11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Tachibana and Takamura et al. ("Constructing a Uniform Color Space...", IEEE Article).

Tachibana teaches that the retrieval unit determines a confusion color set of the colors contained in the determined color group based on confusion color information in association with color blindness of a human being.

Art Unit: 2609

Tachibana does not teach determining which of blocks previously defined in the predetermined color component space for each of the colors contained in the determined color group belongs to and determining a confusion color set based on block-to-block confusion color information associating blocks confused with each other in color blindness in association with color blindness of a human being and information of the block to which each of the colors contained in the determined color group belongs.

Takamura teaches a method that determines which of blocks previously defined in the predetermined color component space (figure 4, triangular segments) for each of the colors contained in the determined color group belongs to (figure 4, each MacAdam ellipse contains triangular segments) and determines a confusion color set ("visually imperceptible color reproduction" at section 1, paragraph 3, line 2) based on block-to-block confusion color information associating blocks confused with each other in color blindness in association with color blindness of a human being (figure 4, defined by the MacAdam ellipses) and information of the block to which each of the colors contained in the determined color group belongs (each block has a defined space in the color space).

It would have been obvious at the time the invention was made to one of ordinary skill in the art for the retrieval unit of Tachibana to determine the confusion color set using the color space construction taught by Takamura as described above, to "reduce the amount of coding bits needed to make a virtually lossless decoded image" (Takamura, at section 5, paragraph 1, line 6).

12. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Tachibana and Weast et al. (US 6,931,151).

Tachibana teaches that the color component space contains the lightness component of each of the colors contained in the determined color group ("maximum luminance is set for a pertinent color (by setting the color elements to 0 or 255)" at paragraph 0051, line 2).

Tachibana does not teach that the retrieval unit removes the attention color from the set when attention color contained in one of the determined sets and another color contained in the set differ in lightness on the color vision characteristics of a human being.

Weast teaches that the retrieval unit removes the attention color from the set ("content is not problematic for color-blind users (step 508), no modifications are made" at col. 9, line 48) when attention color contained in one of the determined sets and another color contained in the set differ in lightness on the color vision characteristics of a human being ("analysis of shade properties could indicate a grouping of two or more distinct colors arranged such that a color-blind person would be unable to detect the presence of two separate shades" at col. 6, line 47).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the element extraction of Tachibana using the content evaluation taught by Weast as described above, to only modify image areas that require further processing.

13. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Tachibana, Meyer and Oleari ("Uniform-Scale Chromaticity...", Color Research & Application).

Tachibana teaches that the retrieval unit determines the plurality of colors as a confusion color set when one attention confusion color in a confusion color group defined so as to contain confusion colors in color blindness in the color component space passes through the inside of the defined nearby area (figure 8; "if all the extracted color elements (R, G, B) lie within a range extending from the maximum to the minimum value of the predetermined color that was set, the pertinent color is deemed to be such predetermined color" at paragraph 0048, line 17).

Tachibana does not teach the attention confusion color being a confusion color locus in a confusion color locus group.

Meyer teaches the attention confusion color being a confusion color locus in a confusion color locus group (figures 3, 4, 5).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the initialization of Tachibana using the confusion loci taught by Meyer as described above, to eliminate unnecessary processing by limiting the criteria of what constitutes a confusion color.

The Tachibana and Meyer combination does not define a nearby confusion area provided based on the color vision characteristics of a human being or the

Art Unit: 2609

characteristics of an output medium in the predetermined color component space for each of the colors contained in the determined color group and determine a confusion color set when one attention confusion color locus passes through the inside of the defined nearby confusion area.

Oleari defines a nearby confusion area provided based on the color vision characteristics of a human being or the characteristics of an output medium in the predetermined color component space for each of the colors contained in the determined color group ("these ellipses represent one standard deviation in color-matching at constant luminance" at paragraph 2, line 2) and determines a color confusion set when one attention confusion color locus passes through the inside of the defined nearby confusion area (figure 1 and 3).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the element extraction of Tachibana and Meyer using the MacAdam ellipses taught by Oleari as described above, to eliminate unnecessary processing by limiting the criteria of what constitutes a confusion color.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,591,008, US 7,054,483 and US 7,124,375 are each pertinent as teaching systems that accommodate color vision deficient users.

Art Unit: 2609

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katrina Fujita whose telephone number is (571) 270-1574. The examiner can normally be reached on M-Th 8-5:30pm, F 8-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian P. Werner can be reached on (571) 272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Katrina Fujita
Art Unit 2609



BRIAN WERNER
SUPERVISORY PATENT EXAMINER